Air Quality Impact Assessment
A8 Edinburgh

The Airshed

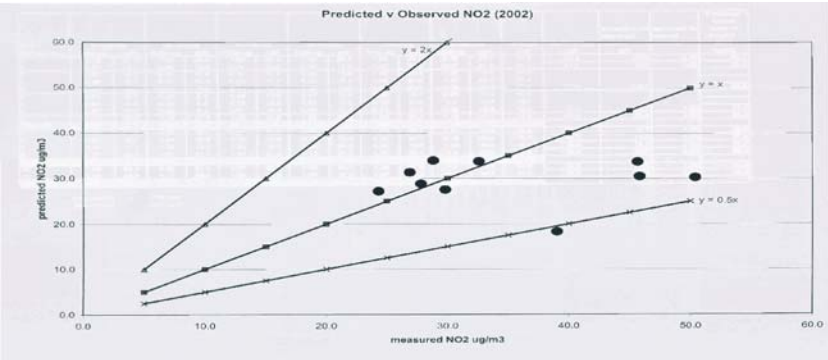
An environmental impact assessment was conducted for the global headquarters for the Royal Bank of Scotland in west Edinburgh. The development was estimated to generate ~6,000 vehicle movements per day.

An initial air quality assessment was conducted using the procedure published in the Design Manual for Roads and Bridges. Although the contribution to local air pollution from the development traffic was predicted to be relatively small, the DMRB assessment method indicated that levels of NO_2 were likely to exceed the annual mean objective for 2005, even without the projected increase in traffic. Other traffic pollutants were predicted to be of minor significance. DMRB is a relatively simple screening model which tends to over predict. A more detailed level of assessment was therefore required, to assess future levels of NO_2.

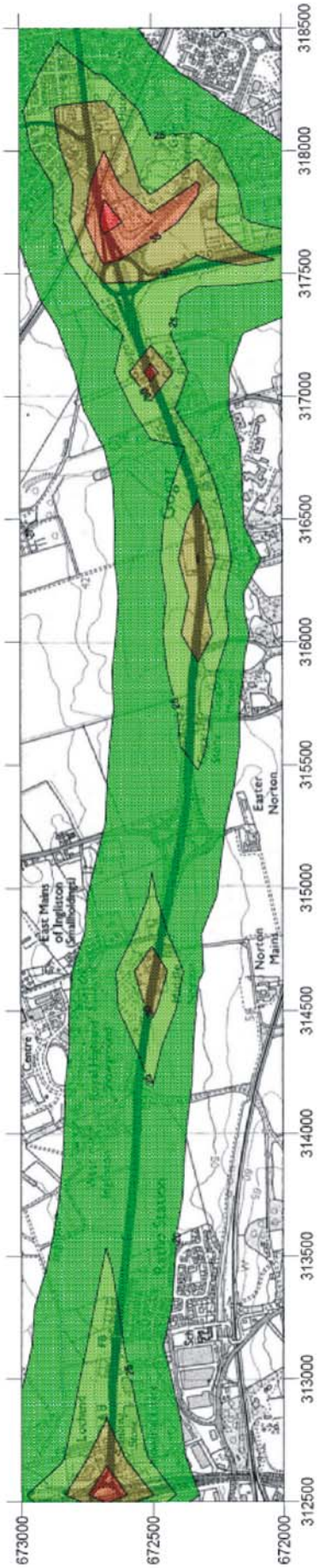
A detailed dispersion modelling exercise was conducted for a 5km section of dual carriageway on the A8 between Newbridge and Maybury. An advanced dispersion model was used to predict atmospheric dispersion using Edinburgh specific fleet characteristics to calculate emission factors. Air quality impacts were predicted for 2005 and 2010.

Diurnal and weekly traffic patterns were surveyed. Baseline NO_2 air quality was measured at two locations using real time monitoring. The selected sites were urban intermediate and background. The survey was designed to help assess the local background from traffic, industry and the nearby airport. Diffusion tubes were also used to extend the baseline survey. Air quality impacts were predicted using an advanced dispersion model for the years 2005 and 2010.

A full model sensitivity analysis was conducted to include for emission factors, speed, weather conditions, receptor



height, and surface roughness. The model validation study found good agreement between the predicted and measured levels. The study concluded that the additional traffic would have a minor effect on local air quality and that air quality objectives would not be exceeded.



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